

Mineral Resource

Arizona Mining Industry - 2004

Large increases in metal prices and strong demand for industrial mineral commodities resulted in a 39 percent increase in the value of Arizona's mineral production. According to preliminary data released by the USGS Arizona continued to rank 3rd nationally in the value of non-fuel mineral production. The total value of mineral production for the year exceeded \$3.3 billion dollars. A spectacular rise in copper prices to near record levels resulted in an increase in the value of Arizona's copper production, bringing the 2004 total to \$2.13 billion.

In 2004 Arizona produced over 60 percent of the nation's copper and was also a leading producer of molybdenum, sand and gravel, and gemstones.

Safford! At Last!

The U.S. Department of Interior, after 11 years of delays, made the decision on April 13 to approve a land exchange that will allow development of Phelps Dodge's Safford leach project in Graham County. The decision allows the company to proceed with development of the Dos Pobres/San Juan copper deposits near Safford.

The mine will generate 745 jobs and provide \$4.6 million in local government revenues. The economic impact for the region is estimated at between \$42 million and \$52 million.

Arizona Copper Production

Cu - million lb.

Mine, Company	2004
Morenci, Phelps Dodge & Sumitomo	840.6
Ray, Asarco	241.2
Bagdad, Phelps Dodge	220.2
Sierrita, Phelps Dodge	155.0
Mission, Asarco	54.0
Silver Bell, Asarco & Mitsui	47.5
Pinto Valley, BHP	20.3
Miami, Phelps Dodge	19.6
Mineral Park, Mercator	3.7
Total	1602.1

Value of Arizona Mineral Production ¹

Commodity	2004 ⁴
Copper	\$2,130,000,000
Gemstones	1,450,000
Sand and Gravel, const.	372,000,000
Stone, crushed	52,000,000
Combined values ²	447,000,000
Subtotal	3,000,000,000
Coal ³	312,000,000
Total	\$3,312,000,000

1. USGS data except as noted.

2. Includes cement, clay, lime, gypsum, gold, molybdenum, perlite, salt, silver, dimension stone, zeolites, and iron oxides

3. ADMMR data

4. Unpublished USGS data, subject to change; official preliminary 2004 will be published in the Arizona chapter of the USGS Mineral Yearbook, Area Reports: Domestic 2004, Volume II.

Copper Price

Copper prices are approximately 22 percent higher than a year ago. Copper reached \$1.536 a pound on April 12, the highest since March 1989.

Asarco Headquarters Now in Tucson

Asarco has moved its headquarters to Tucson from Phoenix and changed its status to a limited liability corporation. Asarco was bought by Grupo Mexico S.A. in 1999 and Asarco moved its headquarters from New York City to Phoenix in 2001.

Asarco operates the Ray, Silver Bell, and Mission mines in Arizona.

Three Circulars Released

Three new circulars listing government agencies concerned with mining in Arizona have been updated and are now available. Circulars 109, 110, and 111 contain direct contacts for the agencies. They can be picked up at ADMMR, ordered by mail, or downloaded from the website.

PDAC

ADMMR was an exhibitor at this year's Prospectors and Developers Association of Canada, (PDAC) International Convention, Trade Show and Investors Exchange held in March in Toronto Canada. This function, the 73rd annual, is the premier event of its kind. Mineral exploration and mining companies from all over the world assemble here each year.

This year there were over 700 exhibitors, 350 junior and senior mining companies at the investors exchange, and 12,000 attendees from 80 countries.

Arizona's Metallic Resources - Trends and Opportunities Available

The Department's handout, developed especially for the conference, is Open File Report 05-22, Arizona's Metallic Resources – Trends and Opportunities, by Nyal Niemuth. The publication includes an overview of mining in Arizona, sections on porphyry copper, uranium, gold, and volcanogenic massive sulfides and a Department publication list. The publication is available free from the Department office, as a download on our website, or for \$1.50 postage if mailed.

The Department's partners included the Arizona BLM, Arizona Department of Commerce, the Arizona Geological Society, the Arizona Geological Survey, the Arizona Mining Association, The Arizona State Land Department, and the University of Arizona Institute for Mineral Resources.

Delegates repeatedly welcomed Arizona's presence and took it as an affirmation to companies already involved in Arizona of the State's commitment to mining and an encouragement to those who may consider a project here.

O'Hara Named to Board of Governors

Patrick F. O'Hara has been appointed to the Department's Board of Governors by Governor Janet Napolitano. His 5-year term runs through January, 2010.

Dr. O'Hara is a mineral explorationist specializing in mineral property acquisition, applied geochemistry, and microscopy. He earned his B.A. and M.A. degrees from Queens College of the City University of New York and his Ph.D.

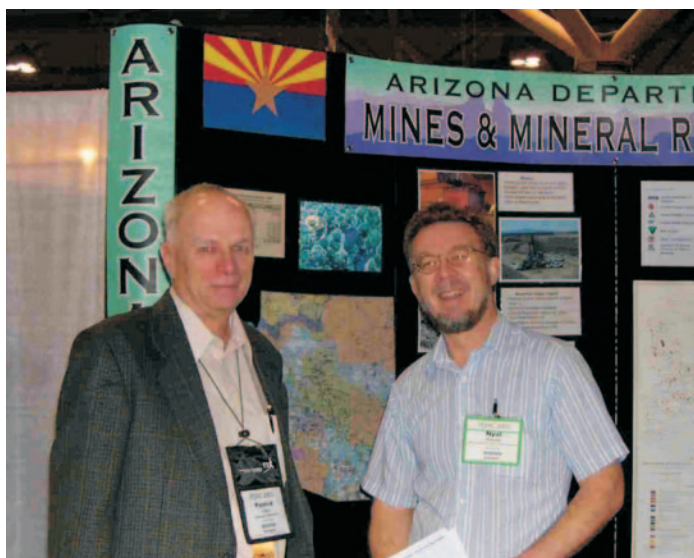
from Arizona State University. For twenty-three years he has run his mineral exploration company, which specializes in mineral deposits, especially Proterozoic volcanogenic massive sulfide terrains, applied geochemistry, and mineralogy. He is currently a part-time associate professor at the Northern Arizona University Prescott Campus.

Dr. O'Hara has authored, or co-authored 280 geochemical maps, 70 geologic maps, and 18 geological reports for industry, and contributed 20 peer reviewed papers and 40 abstracts for publication with various co-authors.

He is a member of the Society of Economic Geologists, Society of Mining, Metallurgy, and Exploration (SME), Geological Society of America, Mineralogical Association of Canada, Society of Exploration Geochemists, Mineralogical Society of America, and American Institute of Professional Geologists. Dr. O'Hara has served as Vice chairman and Chairman of the Grand Canyon Section and served on the Research Council and the Geochemistry committee of SME.

He is an outdoor sports enthusiast and enjoys camping and fishing in Arizona. Married for seven years, he is step-father to five children, and grandfather to seven.

The Department is pleased to have such a prestigious applied scientist and businessman named to the Board of Governors. His impressive experience with Arizona deposits and his knowledge of geochemistry, mineralogy, and mineral deposits will be a valuable resource for ADMMR.



Dr. Patrick O'Hara, left, with Nyal Niemuth at the PDAC Conference in Toronto.

Museum News

by Susan Celestian, Curator

It has been a while since the last newsletter, and a lot has been going on in the Museum – no fooling!

Friday, April 1 we held the Volunteer Recognition Banquet and celebrated the donation of 11,035.5 hours of time! Ninety attendees were entertained by the PowerPoint stylings of Stan Celestian, and enjoyed a wonderful meal. The Arizona Mineral & Mining Museum Foundation and The Friends of the Arizona Mining & Mineral Museum underwrote expenses for the event. Special plaques were awarded to Shirley Cote, Charlie Connell, and Karl Baker – each with over 7000 hours of accumulated time. Twenty-seven people donated over 100 hours in 2004, and they received a heavy-duty imprinted tote bag. A memorial plaque dedicated to Emily Cox, who died in December, will be hung in the shop. She was a lapidary shop monitor for many years and had accumulated 2220 hours of time.

The Museum has displayed at the Wickenburg Show, Rockfest, Tucson Show, Apache Junction Show, Phoenix Gem & Mineral Show, and the Foothills Public Library. We will be exhibiting for the first time at the White Mountain Gem & Mineral Show in May.

New and upgraded in-house exhibits have been created. Sam Nasser has been dedicated to displaying some of the exceptional specimens that have been hiding in storage, and several beautiful “new” specimens adorn the main exhibit area. The *Quartz* case, spotlighting specimens from the collection of Ann Baker, has been updated. The *Meteorites* case has also been expanded and lots of new information has been added. *Volcanic Bombs* of all shapes are explained in an exhibit created by Stan Celestian. Shirley Cote has nearly finished an exhibit that addresses the *Causes of Color in Minerals*. And as adjunct, I have written several handouts that expand on in-

formation presented in exhibits: *Fulgurites*, *Birthstones*, *Turquoise*, *The Sky is Falling*, and *Petrified Wood*.

We have gratefully received several important donations, and these will be catalogued soon. But three deserve special note. With monetary donations received when my father died in May 2004, I purchased a beautiful Spessartine & Smoky Quartz from China. A very recent and exciting discovery of fulgurites in Queen Creek has resulted in the addition of a fabulous specimen of local origin to the collection. Lastly, remember those ‘wonderful’ pear wood crystal models in mineralogy class? Well, we have been given 254 of them from an Ohioan, who discovered us when he ran past the Museum in a recent marathon. And they are wonderful!

Arizona Prospectors Association (APA) members have donated many hours of hard work. Saturday, January 29th was a Clean-up Day at the Museum. Literally tons of trash, un-useable wood, rock debris, and other material were hauled off – either to off-site storage or to the dump.

Then on February 19th, the Museum and APA co-hosted Prospectors’ Family Day. Other crucial participants included Leaverites, Maricopa Lapidary Society, and Mineralogical Society of Arizona. Visitors poured in – 633 in all! Remember when we were busy if we had 200 attendees?

My last bit of very exciting news is that the Friends of the Mining & Mineral Museum has recently been awarded three grants for Museum projects. Qwest awarded us \$5000 to upgrade and re-publish the Teacher Pacs (grade appropriate classroom activities and ideas offered free to teachers). Phelps Dodge Foundation awarded \$20,000 toward the Copper Corner (the southwest gallery will be re-designed to present copper minerals, processing, products and related information). And APS Foundation has awarded \$3000 to support the Outreach Program.

Notice

ADMMR is seeking a Director to head the Department. Interested parties can find the listing at:

www.azstatejobs.gov



Do you need this information in an alternative format? Please call the Department at 255-3795.

Carlota Copper Project Available

In April Cambior announced the company is selling the Carlota project located in the Globe/Miami area. The fully permitted Carlotta contains 100 million tons at a grade of 0.39% copper representing 390,000 tons of contained copper. Cambior reports the open-pitabile deposit is amenable to heap leaching and SX-EW (solvent extraction and electrowinning). Capital and pre-production expenditures for the project are forecasted at \$90-100 million and the construction period is estimated at 18 months. Cambior will use the proceeds from the sale to develop its gold projects.

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Address Correction Requested